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Commentary

Dangers of scientific bias against herbal drugs for coronavirus disease 2019

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ABSTRACT

On May 15, 2020, the *Lancet* published an article titled *Use of Herbal Drugs to Treat COVID-19 Should be with Caution*. While this is true of all drugs, herbal and otherwise, the data may be biased and deserve a scientific response. We believe these types of reports will unfairly and negatively impact the field of integrative medicine as a whole, and must be answered with facts and statistics that more accurately represent the current situation.

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1. Introduction

The author of the *Lancet* submission [1] took issue with three herbal drugs that were approved in China for the treatment of coronavirus disease 2019 (COVID-19). They cited lack of evidence for their efficacy and safety concerns, but also voiced other reasons why China should not have approved these herbal drugs for treating respiratory symptoms of COVID-19. This critique was overly harsh, partially inaccurate and relied on data that had been taken out of context. The following is a point by point rebuttal of the article, and an explanation of why herbal drugs are safe and effective.

2. Existing peer reviewed studies

The *Lancet* author claims that there have been no high-quality, rigorously peer-reviewed clinical trials of herbal drugs published in internationally recognized journals. However, *The International Journal of Biological Sciences* published a review on March 15, 2015 [2] that reported how 85% of the 72,528 patients included in the study had been treated with herbal remedies, including some of the patent herbal drugs in question, in addition to standard drug therapy. The study also cites the success of herbal remedies and positive results from many studies of the 2002–2003 severe acute respiratory syndrome (SARS), with which the current

COVID-19 shares 79.5% of its genome sequence. There have been many other smaller studies published as well.

The author claims these studies are based on anecdotal clinical data. While partially true, this is a large-scale study. Further, many studies are currently being conducted in Europe and other places. It is also based on current data for an ongoing epidemic. It is not realistic to expect that any of these would exist for herbal drugs or conventional drugs at the moment because this is all happening real time. We do not have the luxury to wait.

Furthermore, the same logic also dictates that no pharmaceutical medications are safe or effective for COVID-19 either, as there have been no large-scale, high-quality, peer-reviewed randomized clinical trials of Western drugs for the treatment of COVID-19.

3. Safety concerns

The author quotes safety concerns about herbal remedies. First, he cites a study from the 1990's of an herbal weight loss product that caused injury to nine women who participated in the study [3]. The clinic had previously been providing herbal therapies for over 15 years without incident. This is a prime example of the type of anecdotal clinical data that the author condemns, and he does not even mention if any of these herbs are in the current COVID-19 treatments.

He says that further investigation revealed the culprit was "aristolochic acid, a compound found in many traditional herbs." This is simply false. There are thousands of traditional herbs, about 200 or so in common use, and only about 5 or 6 are known to contain this

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compound [4]. These herbs are rarely used and some are banned in the United States and Europe. Even when they are prescribed, they are commonly used in micro-doses in combination with other herbs and are processed in ways to mitigate toxicity.

While this is concerning, nonsteroidal anti-inflammatory drugs (NSAIDs) like aspirin, ibuprofen and acetaminophen cause over 7600 deaths per year in the United States alone, and their use results in internal bleeding in many more cases [5].

This entire point can be invalidated very quickly with the following questions: (1) How many people have died on record last year from herbal drugs? Maybe a handful. (2) Do we have proof of even one? They certainly did not list any evidence to suggest so, only a study from nearly 30 years ago with nine injuries and no deaths. (3) How many people died last year from prescription opioids, NSAIDs and medication errors in hospitals in the United States alone? Hundreds of thousands [5–7]. (4) How many drugs have been recalled after being thoroughly researched in exactly the type of high-quality studies they are requesting, yet went on to kill hundreds of thousands of people before being pulled from the market? Vioxx, Losartan, Fen-Phen, Baycol, Posicor, Bextra and more.

So scientifically speaking and based on all the statistics we have, herbal drugs are infinitely safer than pharmaceuticals will ever be. He advocates for more evidence through controlled clinical trials. We wholeheartedly agree. We would like to see the same for all medications being used to treat COVID-19 as well. But should we try nothing until they are all proven to be safe and efficacious?

4. Customized remedies

The author takes issue with herbal remedies being tailored to the individual. However, we clearly know the allopathic, Western pharmaceutical, one-size-fits-all model does not always work. People have to switch medications all the time due to issues like allergies, side effects and adverse reactions. Sometimes, no matter what they try, the medicine does not produce positive treatment outcomes. An integrative approach is quickly becoming more common in conventional settings because of its demonstrated scientific success.

5. Historical use

The author argues that “thousands of years of usage and faith cannot be taken as evidence for efficacy of traditional herbs.” While there is ample reason to be concerned about blind faith in substances, thousands of years of well-documented clinical data, tested on billions of people, should not be completely discarded as unscientific. We literally have case studies from thousands of years ago, and a growing body of evidence from the last 50 years of modern laboratory research.

Furthermore, the European model for standard registration of herbal medicines clearly allows for herbal medicines to be used when they have shown to be safe and effective, even without clinical trials. The Committee on Herbal Medicinal Products issues scientific opinions on herbal substances and preparations, along with information on recommended uses and safe conditions, on behalf of the European Medicines Agency. Traditional use registration is granted (Article 16a(1) of Directive 2001/83/EC) [8]: “No clinical tests and trials on safety and efficacy are required as long as sufficient safety data and plausible efficacy are demonstrated involving assessment of mostly bibliographic safety and efficacy data. Must have been used for at least 30 years, including at least 15 years within the European Union. Are intended to be used without the supervision of a medical practitioner and are not administered by injection.”

Lastly, according the World Health Organization global report on traditional and complementary medicine in 2019 [9], “Traditional medicine has a long history. It is the sum total of the knowledge, skill and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.”

6. Molecular mechanisms and efficacy

The author complains about the molecular mechanism being obscure, yet they openly admit that some of these patent herbal drugs have wide spectrum anti-viral and anti-inflammatory effects and cite the respective studies [10,11].

The fact is that almost every single pharmaceutical drug in use today is based on compounds extracted from herbs. That we do not know the exact method of action for each compound of each herb does not mean that it is not safe or effective. Quite the opposite is true. We have thousands of years of actual clinical experience, as well as the recent data collected during this outbreak and the initial SARS outbreak of 2002, that proves it is safe and effective. We do not know exactly how safe or how effective, but tens of thousands of lives are at stake now on a daily basis. We cannot afford to hold herbal drugs to impossible standards that are even more stringent than pharmaceuticals based on prejudice. We need solutions immediately and herbal drugs are proven to be much safer than conventional drugs.

The author states that “limited experimental cell cultures and animal studies cannot guarantee safety and efficacy.” But the whole world is currently testing pharmaceutical medications and vaccines on people without any of these same studies.

An excellent reminder, is the 2015 Chinese Nobel Prize winner, Professor Youyou Tu. She saved millions of lives from drug resistant malaria with an herbal drug based on traditional Chinese medicine [12]. Due to the time-crunch, she tested the safety of the final drug on herself and her team before going into production. Had they waited for lengthy clinical trials, millions would have perished in the meantime, even though they had a perfectly working prototype.

7. Over-the-counter availability

Finally, the author claims that having a remedy available “over the counter” will delay people from seeking proper medical diagnosis and treatment of the disease and making it harder to trace. Sure, in the same way Tylenol, Sudafed, NyQuil, Ibuprofen and every other over-the-counter medicine does just that as well. So, should we pull them all off the shelves worldwide when 80% to 90% of the cases are mild and the symptoms are effectively managed by these medicines?

During the early stages of the outbreak in the United States and Europe, citizens were encouraged not to go to the hospital or seek treatment unless they had severe symptoms. They were told to stay home, self-quarantine, and use over-the-counter drug remedies. Testing was not widely available. That is still the current recommendation, with the only difference being that testing is available and can be used for tracing. In times like these, it is common sense to stock up on just-in-case remedies and over-the-counter products. Yet the author seems to only discourage the use of herbal products and completely disregard the alternatives.

8. Conclusion

We believe that articles such as this try to exaggerate the risks of herbal drugs compared to pharmaceuticals. Unfortunately, many

readers see the headlines, skim the articles and improperly assume that there are major risks and safety issues with herbal remedies. This is clearly not the case, and these types of articles may discourage people from seeking safe and effective treatments. We cannot afford to run that risk with COVID-19, especially when the complications from herbal remedies are so low, that they are nearly non-existent. These approved patents should continue to be tested in the field for now, and their use should be expanded to trials in other countries as well.

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Conflicts of interest

The author declares no conflicts of interest.

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